

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/572,664	RHOADES ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ERIC S. OLSON	1623	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendment submitted August 18, 2010.
2. ☒ The allowed claim(s) is/are 12,13,16-21,24 and 28-30.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>20100831</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date ____     | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|  | 9. <input type="checkbox"/> Other ____.  |

/Eric S Olson/  
Primary Examiner, Art Unit 1623

### **Examiner's Amendment**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gary M. Lobel on September 1, 2010.

The following paragraph is added to p. 13 of the specification between lines 8 and 9:

#### **Brief Description of the Drawings**

**Figure 1.** Inhibition of adhesion of VTEC to HT29 cells by methyl-~-D-mannopyranoside and D-mannose, indicating that adhesion is mediated by type I fimbriae. Error bars indicate standard error. Numbers of adhered bacteria are expressed as a percentage of the numbers adhered in the oligosaccharide-free control in each experiment.

**Figure 2.** Inhibition of adhesion of VTEC to HT29 cells by methyl-alpha-d-mannopyranoside, alpha-1,6-and alpha-1,2-mannobiose. Error bars indicate standard error.

**Figure 3.** Anti-adhesive activity of selected saccharides against VTEC and EPEC. The pectic oligosaccharides show powerful anti-adhesive activity against both VTEC and EPEC (Figure 3).

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**Figure 4.** Anti-adhesive activity of carbohydrate compounds against-E, coli VTEC (O157:H7 NCTC 12900).

**Figure 5.** Anti-adhesive activity of carbohydrate compounds against enteropathogenic E. coli EPEC (O119:H49). Error bars indicate standard error of the mean of triplicate assays.

**Figure 6.** Anti-adhesive activity of compounds. Error bars indicate the standard error of 5 triplicate assays.

### **Detailed Action**

This office action is a response to applicant's communication submitted August 18, 2010 wherein claims 27 and 31 are cancelled. This application is a national stage application of PCT/EP04/10469, filed September 17, 2004, which claims priority to foreign application GB0321996.1, filed September 19, 2003.

Claims 12, 13, 16-21, 24, and 28-30 are pending in this application.

Claims 12, 13, 16-21, 24, and 28-30 as amended are examined on the merits herein.

### **Reasons for Allowance**

Applicant's amendment, submitted August 18, 2010, with respect to the rejection of instant claim 31 under 35 USC 103(a) for being obvious over Isoda et al., has been fully considered and found to be persuasive to remove the rejection as claim 31 has been cancelled. Therefore the rejection is withdrawn.

Currently claims 12, 13, 16-21, 24, and 28-30 are pending in this application and have been examined on the merits herein. Applicant's amendment submitted August 18, 2010, is seen to be persuasive to remove all rejections of record in the previous office action and place the application in condition for allowance. Reasons for allowance are as follows:

The claimed invention is seen to be adequately described and enabled by the specification as originally filed. Therefore the claims meet the requirements of 35 USC 112.

Furthermore the claimed invention is seen to be novel and non-obvious over the prior art. The prior art does not disclose either a pharmaceutical combination of a methyl-alpha-mannooligosaccharide with proanthocyanidins, a pharmaceutical composition comprising between 2.5-10% of methyl-alpha-mannooligosaccharides, or a method comprising administering a methyl-alpha-mannooligosaccharide to a mammal. Although methyl-alpha-mannooligosaccharides are known in the art, the disclosures of these compounds in the art do not meet all of the limitations of the allowed claims. For example, US patent 4895838 (Reference cited in PTO-892) discloses a number of different oligosaccharides to be used for increasing angiogenesis. However, the only methyl-alpha-mannooligosaccharide (column 14 line 46) disclosed in this reference was tested and not found to be appreciably active for increasing angiogenesis. Therefore one of ordinary skill in the art would not have used methyl-alpha-mannooligosaccharides in the disclosed methods or incorporated it into a pharmaceutical composition having a specific concentration of oligosaccharide as described in instant claim 24, or combined it with other ingredients such as proanthocyanidins. Furthermore while US patents 7053067 and 5459257 (References cited in PTO-892) disclose therapeutic uses for oligosaccharides, neither of these references discloses methyl-alpha-mannooligosaccharides. Other references in the art to methyl-alpha-mannooligosaccharides concern their presence as bacterial polysaccharides, as exemplified by Weisman et al. (Reference included with PTO-892) These oligosaccharides are not shown to be present in the bacteria or in any other isolate in an amount of 2.5-10% as recited in instant claim 24 or to have any biological

activity that would motivate one of ordinary skill in the art to use them in the compositions or methods of the instant claims.

For these reasons the claimed invention meets the requirements of 35 USC 102 and 103.

Accordingly, Applicant's amendment submitted August 18, 2010, is sufficient to remove all rejections made in the prior office action as discussed above and to place the application in condition for allowance.

Any comments considered necessary by Applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled, "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric S. Olson whose telephone number is 571-272-9051. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia Anna Jiang can be reached on (571)272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric S Olson/  
Primary Examiner, Art Unit 1623  
9/1/2010